SukantaMahavidyalaya

2nd semester practical examination ,2021

Sub : Organic chemistry (hons)

Time : 2Hrs **Paper : CC3**F.M. 20

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1. Answer the following questions (**Any three**)[3×5 = 15]

a) i)What is difference between evaporation and distilation?[2+3]

ii) Which eluent is use for paper chromatography?

b) i) What is melting point and boiling point of a compound?[2+3]

ii) What is the effect of impurities in boiling point of of organic compound?

c) i) What is eluent and elution chember?[2+3]

ii) What is mobile phase and stationary phase?

d) i) What is the full form of R_f value ane why R_f value is alwayl less then 1. 2+3

e) i) What is the full form of TLC.

ii) Write down the kjeldahl's method of melting point determination. 2+3

2. Laboratory Note Book.5

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2nd Semester practical Examination, 2021

Subject: **Chemistry**

Paper: CC-4

Time: 2 Hrs F.M. 20

Answer any three questions **3×5 = 15**

1. What is Surface Tension? What Causes Surface Tension? What is the Unit of Surface Tension? 2+2 +1

2. What is the Principle of determination Surface Tension of liquid? Discuss the experimental procedure of determination Surface Tension by drop-counting method. If common salt and detergent added in water then what happened the surface tension of water (Increased/Decreases)? 2+2+1

3. What is the theory of determination of coefficient of viscosity? How can you determination the coefficient of viscosity of unknown composition of solution from the Graph? What happens to the viscosity of liquid and gas with the increase in temperature (increase/Decrease) ? 2+2+1

4. What is Heat Capacity? What are the differences between Cp and Cv? What is the heat of neutralization? 1+2 +2

5. How can you determine the heat capacity of calorimeter? 5

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2nd Semester practical Examination, 2021

Subject: **Chemistry**

Paper : GE-2 /DSC-2

Time: 2 Hrs F.M. 20

Answer any three questions **3**×5 = 15

1. i) Describe the procedure for the preparation of 2,4-DNP derivative of an aldehyde.

   ii) Can a 2,4-DNP test distinguish between an aldehyde and a ketone?

   4+1

2. i) Describe the procedure for the preparation of bromo derivative of phenol.

   ii) If bromination occur in aniline then which position Br is introduce.

   4+1

3. What is Surface Tension? What Causes Surface Tension? What is the Unit of Surface Tension? 2+2 +1

4. What is Heat Capacity? What are the differences between Cp and Cv? What is the heat of neutralization?

   1+2 +2

5. What is a buffer solution? Give one example of acidic buffer solution? How pH of buffer solution remains constant?

   2 +1 +2

SUKANTA MAHAVIDYALAYA

4th Semester Practical Examination,2021
Subject-CC8 (Inorganic Chemistry)

Full Marks-20 Time Allowed-2Hrs

1. Laboratory Note Book 5

2.Answer any **three** questions. (5x3=15)

A) i)What do you mean by gravimetry?
ii)Write down the principle steps involved in gravimetric analysis. (2+3=5)

B) i)Why copper is precipitated as copper thiocyanate?
ii) What do you mean by Co-precipitation and post-precipitation? (2+3=5)

C) i)What is meant by 'geometrical isomerism'- Explain briefly.
ii)What is the colour and shape of the crystals of tetrammine copper(II) sulphate?
iii)Why ethyl alcohol is added for precipitation of tetrammine copper(II) sulphate?
(2+2+ 1=5)

D) i)What is the principle of paper chromatography?
ii)What do you mean by 'R_f' value? (3=2=5)

E) i)Write down the structures of both Cis and trans isomer of
Dioxalatodiaquachromate (III) complex.
ii)Which of the isomer of the above complex is optically active and why? (2+3=5)

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4th Semester practical Examination, 2021

Subject: Organic Chemistry(Hons)

Time: 2 Hrs**Paper : CC9**F.M. 20

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1. Answer the following questions (**Any three**) 3×5=15

a)i) What is Esterification test?[3+2]

ii) Write down the reaction of Esterification test?

b) Describe the Muliken and Barker's test and which Functional group is determine by Muliken test?3+2

c) Give the conformative test and Observation of aromatic amine group? 3+2

d) i) Write down the back dye test.

ii) Write down the reaction involve in back dye test. 3+2

e) i) Write down the 2,4 dinitrophenoyl hydrazine test and also write the reaction involve in it. 3+2

2) Laboratory Note Book.5

Sukanta Mahavidyalaya

Practical Assessment

Subject:-CC10 practical (Physical Chemistry)

Full Marks: 15 Time: 2 Hour

Answer any three questions 3×5 = 15

1) (i) Define specific and equivalent conductance. (ii) How specific and equivalent conductance change with dilution.

(2 + 3)

2) (i) Define cell constant. (ii) Write down a condition where cell constant of a specific cell is unity. (iii) Arrange the electrolytes with suitable explanation in descending order of equivalent conductance at infinite dilution in the following compound (a) NaOH, (b) HCl, (c) NaCl, and (iv) CH_3COOH. (iv) Write down the mathematical expression of degree of dissociation for weak electrolytes in terms of equivalent conductance.

(1 + 1 + 2 + 1)

3) (i) Write down the basic principle of conductometric titration for a weak acid vs strong base. (ii) During the conductometric titration of weak acid CH_3COOH with strong base NaOH, a slight drop of conductance occurs initially -why?

(3 + 2)

4) (i) Write down the basic principle of potentiometric titration for a strong acid vs strong base. (ii) Write down the type of electrode used in the above titration.

(3 + 2)

5) (i) What are the procedures applied to determine the equivalent point of a titration in conductometric and potentiometric titration. (ii) How the

potential of an electro-chemical cell depends upon activity of reactant and product – derive it in thermodynamics point of view.

(2 + 3)

DSC4/GE4 (Semester 4)
Inorganic & Physical Chemistry Practical Assessment

Sukanta Mahavidyalaya

Answer any three questions **3 × 5 = 15**

Q1) (a) what do you understand by gravimetric analysis? (b) What are the principle steps involved in gravimetric analysis? – Explain briefly.

(2 + 3)

Q2) (a) what are meant by co-precipitation and post-precipitation? (b) Why an excess of dimethyleglyoxime is avoided during gravimetric estimation of nickel.

(2 + 3)

Q3) (a) what is complexometric titration? (b) What is the full name of EDTA? (c) Write down the structure of EDTA. (d) What is EBT?

(2 + 1 + 1 + 1)

Q4) (a) Distinguish between surface tension and surface energy. (b) How surface tension changes with temperature? (c) Write down the dimension of surface tension.

(3 + 1 + 1)

Q5) (a) Write down the working principle of Ostwald Viscometer. (b) How viscosity coefficients vary in case of liquid and gas with temperature?

(3 + 2)

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4th Semester Practical Examination, 2021

Subject: **Green Chemistry**

Paper: **SEC -2** (Hons/Prog.)

Time: 2 Hrs F.M. 20

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1) Answer the following questions (Any three): 3×5=15

a)i) What is the12 basic principal of Green Chemistry? 3+2

Ii) what is CCS?

b)i)Write the materials required, apparatus and procedure of bromination of anilide using Green approach? 3+2

ii) Why it is a Green reaction?

c) i) Give the materials required, apparatus and procedure of solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper(II)? 3+2

ii) Why it isa Green reaction

d) Write the procedure and green context of preparation of benzylic acid using green approach? 3+2

e) Give the procedure and green context of preparation of Biodiesel from Vegetable Oil? 3+2

2) Laboratory Note Book. 5

SUKANTA MAHAVIDYALAYA

6th Semester Practical Examination,2021

Subject-CC13 (Inorganic Chemistry)

Full Marks-20 Time Allowed-2Hrs

1)Laboratory Note Book 5

2)Answer any three questions (5x3=15)

A) i)On What basis group separation is Carried out?
ii)Why should the interfering acid radicals be removed before the precipitation of Gr III A? (2+3=5)

B) i)What are Interfering acid radicals? Why are they so called?
ii)What is the group reagent of Gr III A ? Why is NH_4Cl added before precipitating metal ions of this group? (3+2=5)

C)i)What do you mean by solubility product?
ii)There is no group reagent for GrV-why?
iii) What is buffer solution? (2+2+1=5)

D) i) Name the sulphates which are insoluble
ii)What is the advantage of prepairing sodium carbonate extract?
iii) What is the formula of 'Borax'?
(2+2+1=5)

E) i)What is the Chemical formula of hexamminenickel(II) chloride?
ii)Why Ni(II), a d^8 System is the most suitable for studies regarding ligand-exchange reaction?
iii)Give any two examples of bidentate ligands (1+2+2=5)

Sukanta Mahavidyalaya

Practical Assessment

Subject:-CC14 practical (Organic Chemistry)

Full Marks: 15 Time: 2 Hour

Answer any three questions 3×5 = 15

1) (i) Write down two general tests for identification of carbohydrate compound. (ii) What is glycosidic linkage? (iii) Some disaccharides such as maltose are reducing agents, whereas others, such as sucrose are not.- Why?

(3 + 1 + 1)

2) (i) How could you determine pentose sugar? (ii) How could you distinguish aldoses from ketoses? (iii) What do mean by inversion of sucrose?

(2 + 2 + 1)

3) (i) Write down the principle to isolate Caffeine from Tea Leaves. (ii) Why some time anhydrous $MgSO_4$ is added during isolation of Caffeine (iii) What are the other compound extracted in water from Tea Leaves?

(3 + 1 + 1)

4) (i) Why diazotization reaction is done in very low temperature. (ii) Describe some important application of azo-dye. (iii) Write down the laboratory synthesis method of Methyl orange.

(1 + 1 + 3)

5) (i) How could you identify ethane, ethylene and acetylene using IR and NMR spectra? (ii) Write down the structure of a compound whose proton shows negative value of chemical shift in ppm.

(4 + 1)

Sukanta Mahavidyalaya

Practical Assessment

Subject:-DSE3 practical (Polymer Chemistry)

Full Marks: 15 Time: 2 Hour

Answer any three questions 3×5 = 15

1) (i) How the molecular weight of a polymer is determine using the Ostwald method?-Explain briefly. (ii) Define the term intrinsic viscosity. (4 + 1)

2) (i) Why polymers have multiple molecular weights? (ii) Define different molecular weights of polymers and which experiment techniques used to determine it. (iii) Mention one important information obtained from different molecular weight. (1 + 3 + 1)

3) (i) How the molecular weight of PEG is determine using the end group analysis?-Explain briefly. (ii) Why similar volume of water is added in PMDA standard solution and PMDA and PEG reaction mixture. (3 + 2)

4) (i) Write down the mechanistic path involved in the formation of urea formaldehyde resin. (ii) What is gel point of a polymer-describe with suitable example. (3 + 2)

5) (i) Urea formaldehyde resin is an addition polymer or condensation polymer. (ii) Briefly describe the properties of Urea formaldehyde resin. (iii) What are the main uses of the urea formaldehyde resin? (1 + 2 + 2)

Sukanta Mahavidyalaya

Department of Chemistry

Semester : 6th

Paper: **DSE-2 (Program) / DSE-4 (Honours)**

Title: Industrial Chemicals & Environment Practical

Time: 2 hours **Marks: 20**

Give Answer any Three

1. What is theory of determination of chloride in water **by** Mohr method? How can you calculate the amount of chloride in water sample by this titration method. 3+2
2. Write down the principle of the determination of sulphide present in the sample by titrimetric method. Discusss the titration procedure. 2+3
3. Write down the Principle of Estimation of total alkalinity of water samples (CO_3^{2-} , HCO_3^-) using titration method. Why two indicators are used in this titration? 3+2
4. What is Bio-indication? Give common example. How lichens function as Bio-indicator? 2+1+2
5. How water pollution is testing by bioindicaton? How Bird is work as bio indicaton? 2.5 +2.5

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6th Semester practical Examination, 2021

Subject: **Chemistry of Cosmetic & Perfumes**

Paper: SEC-4

Time: 2 Hrs F.M. 20

Answer any three questions **3×5 = 15**

1. What are the factors on which the choice of raw materials for cosmetic preparation depends? what are crèams ? 3+2
2. How can you prepare Shampoo? Discuss the ingredient and method. 5
3. What is talcum powder? Write down the method and preparation of talcum powder. 1+4
4. Write down the ingredient of Hair Dye and face crème. 5
5. Discuss the preparation of nail polish and nail polish remover. 5